

Claims

[c1] 1. An apparatus for supporting a workpiece and comprising:

a mount adapted for fixed attachment to a support;
a workpiece-supporting tool assembly including structure for receiving and holding a workpiece; and
a frame assembly coupled to said mount, including first and second arms, said first arm pivotal relative to the mount about a first axis of rotation, said second arm pivotal relative to the first arm about a second axis of rotation, the first and second rotational axes essentially lying in a common plane and intersecting to define a work zone at the region of intersection thereof,
said second arm including an outboard portion spaced from said first arm and offset from said common plane, said outboard portion supporting a fixture for receiving said workpiece-supporting tool assembly, with said fixture and workpiece-supporting tool assembly being cooperatively oriented and configured so that a supported workpiece is located substantially at said work zone, said workpiece-supporting tool assembly being shiftable by pivoting of said arms to selectively alter the orientation of said workpiece while maintaining the workpiece

substantially within said work zone.

- [c2] 2.The apparatus as claimed in claim 1,
said first and second axes being generally perpendicular
relative to one another.
- [c3] 3.The apparatus as claimed in claim 1,
said first arm being generally L-shaped and presenting a
proximate end adjacent the mount and a distal end
spaced from the mount.
- [c4] 4.The apparatus as claimed in claim 3,
said second arm being pivotally coupled to the distal end
of the first arm,
said second arm being generally L-shaped and present-
ing a proximate end adjacent the first arm and a distal
end spaced from the first arm and located on said out-
board portion.
- [c5] 5.The apparatus as claimed in claim 4,
said first arm being provided with structure permitting
the second arm to be pivotally connected to the first arm
at a selected position vertically whereby the position of
the workpiece supporting tool assembly relative to the
first arm and the height of the workpiece carried by the
workpiece supporting tool assembly may be selectively
adjusted.

- [c6] 6.The apparatus as claimed in claim 1,
said fixture being coupled to the distal end of the second
arm and including a collar adjustably mounted relative to
the second arm.
- [c7] 7.The apparatus as claimed in claim 6,
said fixture including a locking ring adjustably received
on the collar for selective engagement with the second
arm to thereby prevent movement of the collar relative to
the second arm.
- [c8] 8.The apparatus as claimed in claim 6,
said fixture including a threaded neck,
said collar being threadably received in said neck.
- [c9] 9.The apparatus as claimed in claim 6,
said fixture including a neck having a key formed
therein,
said collar being slidably received in said neck and in-
cluding a keyway configured for engagement with said
key to thereby substantially prevent rotation of the collar
relative to the neck.
- [c10] 10.The apparatus as claimed in claim 8,
said fixture including an additional locking ring,
said first-mentioned and additional locking rings each
being threadably received on the collar,

said neck being positioned between said first-mentioned and said additional locking rings.

[c11] 11.The apparatus as claimed in claim 1,
said workpiece-supporting tool assembly being removably received in said fixture.

[c12] 12.The apparatus as claimed in claim 1,
said workpiece-supporting tool assembly including a tubular tool assembly clamp slidably received in the fixture and a compressible workpiece holder removably received in said tool assembly clamp.

[c13] 13.The apparatus as claimed in claim 11,
said tool assembly clamp including a generally cylindrical housing and a receiver slidably received within the housing,
said receiver including a pin-receiving slot at one end and a threaded shaft at the opposing end,
said workpiece holder including a pin configured for slidable receipt in said pin-receiving slot.

[c14] 14.The apparatus as claimed in claim 12,
said tool assembly clamp including a threaded nut rotatably supported on the housing,
said nut threadably engaging said receiver shaft to thereby slide the receiver relative to the housing as the

shaft is threaded into and out of the nut.

[c15] 15.The apparatus as claimed in claim 1; and
a handrest removably coupled to the mount.

[c16] 16.The apparatus as claimed in claim 14,
said mount including a plate presenting opposing ends,
said handrest presenting an upwardly oriented wrist-
supporting surface alternatively couplable to either end
of the plate so that the surface remains upwardly ori-
ented.

[c17] 17.A workpiece-supporting tool assembly comprising:
an elongated, tubular housing presenting an upper end
and a lower end;
a workpiece holder removably received within said hous-
ing and including an upper workpiece-holding end adja-
cent said housing upper end and a lower end within the
housing having a first latch component; and
a connector associated with said housing lower end and
including a second latch component,
one of said first and second latch components compris-
ing a movable element, and the other of said first and
second latch components comprising structure selec-
tively receiving said movable element,
said first and second latch components being selectively
shiftable between an engaged, latching position for re-

taining said holder within said housing and a disengaged position permitting removal of the holder from the housing.

[c18] 18.The workpiece-supporting tool assembly as claimed in claim 17,

said first latch component being said latch pin,
said lower end of said workpiece holder including a shaft,
said latch pin being coupled to the shaft.

[c19] 19.The workpiece-supporting tool assembly as claimed in claim 18,

said housing presenting a holder-receiving chamber defining a generally longitudinal axis,
said latch pin extending generally transverse to the shaft,
said latch pin extending generally transverse to the chamber axis when in the engaged position.

[c20] 20.The workpiece-supporting tool assembly as claimed in claim 17,

said second latch component being an element-receiving slot.

[c21] 21.The workpiece-supporting tool assembly as claimed in claim 20,

said connector including a shaft having a bossed portion, said element-receiving slot being formed in the bossed portion.

[c22] 22. The workpiece-supporting tool assembly as claimed in claim 21,
said bossed portion of the connector shaft being sized and configured to receive the lower end of the workpiece holder,
said lower end of the workpiece holder being yieldably biased away from the bossed portion when received therein.

[c23] 23. The workpiece-supporting tool assembly as claimed in claim 20,
said element-receiving slot being generally helically shaped.

[c24] 24. The workpiece-supporting tool assembly as claimed in claim 17,
said workpiece holder being rotatably supported in the housing,
said first latch component being caused to slide into and out of the engaged position when the holder is rotated relative to the housing.

[c25] 25. The workpiece-supporting tool assembly as claimed

in claim 24,
said first latch component being slidable from the engaged position to the disengaged position by rotating the workpiece holder less than one revolution relative to the housing.

[c26] 26.The workpiece-supporting tool assembly as claimed in claim 17,
said connector including a threaded shaft,
a nut configured to removably and threadably receive the shaft and being rotatably supported on the housing so that at least a portion of the nut remains supported on the housing when the shaft is removed from the nut.

[c27] 27.The workpiece-supporting tool assembly as claimed in claim 17,
said workpiece holder including a pair of compressible jaws.

[c28] 28.The workpiece-supporting tool assembly as claimed in claim 17,
said workpiece holder including an expandable collet.

[c29] 29.A handheld craftsman's tool assembly for supporting a workpiece, said tool assembly comprising:
a housing configured and dimensioned to be held in a hand of the craftsman,

said housing presenting a holder-receiving chamber;
a workpiece holder removably received in the chamber
and operable to support the workpiece; and
a connection assembly operable to removably and adjustably couple the holder and the housing,
said connection assembly including a shaft and a nut,
at least a portion of said shaft being removably and threadably received within the nut so that threading of the shaft into the nut adjusts the holder relative to the housing,
at least a portion of said nut being connected to and rotatable independently of the housing when the shaft is removed from the nut.

[c30] 30. The handheld craftsman's tool assembly as claimed in claim 29,
said housing presenting opposite first and second ends,
said holder being received in the first end,
said housing including a slot formed in the second end.

[c31] 31. The handheld craftsman's tool assembly as claimed in claim 30,
said nut presenting a top and a bottom,
said nut including a flange formed in the top and configured to be slidably received in said slot for rotatable support therein.

[c32] 32.The handheld craftsman's tool assembly as claimed in claim 31,
said chamber including upper and lower sections and an annular ledge therebetween,
said upper section presenting a first diameter and said lower section presenting a second diameter smaller than the first diameter.

[c33] 33.The handheld craftsman's tool assembly as claimed in claim 32,
said shaft slidable into and out of a threading position wherein the shaft extends through the slot formed in the second end of the housing.

[c34] 34.The handheld craftsman's tool assembly as claimed in claim 33,
said shaft including a key extending transversely therefrom,
said lower section including a keyway sized and configured to slidably receive the key,
said key engaging the ledge to hold the shaft out of the threading position and positionable into the keyway to permit the shaft to slide into the threading position.

[c35] 35.A set of jewelry-supporting craftsman's tools, each tool being interchangeable into and out of a tool assembly clamp wherein the tool assembly clamp includes a

tool-receiving chamber, said set of tools comprising:
a tool selected from the group consisting of a jaw-type tool, a multi-purpose vise, an inside ring holder, and a pitch cup,
said tool including a shaft configured to be received within the tool-receiving chamber for removable coupling to the tool assembly clamp and generally defining an elongated axis,
said tool including a crossbar coupled to the shaft and dimensioned and configured to be received within the tool-receiving chamber,
said crossbar extending generally transversely from the elongated axis.

[c36] 36.The set of jewelry-supporting craftsman's tools as claimed in claim 35,
said shaft being devoid of threading so that the tool can be non-threadably received in the tool-receiving chamber.

[c37] 37.The set of jewelry-supporting craftsman's tools as claimed in claim 35,
said jaw-type tool including a pair of compressible jaws.

[c38] 38.The set of jewelry-supporting craftsman's tools as claimed in claim 35,
said inside ring holder including an expandable collet.

[c39] 39. An apparatus for supporting a workpiece and comprising:
a workpiece-supporting tool assembly including structure for receiving and holding a workpiece;
a frame assembly adapted to be coupled relative to a support and including a fixture that receives said workpiece-supporting tool assembly; and
a handrest presenting a generally upwardly facing wrist and accessory supporting surface;
structure mounting the handrest on the frame assembly in a first position wherein the handrest is adjacent one side of the workpiece-supporting tool assembly and in a second position adjacent the opposite side of the workpiece-supporting tool assembly,
said supporting surface remaining generally upwardly facing when the handrest is in the first position and when the handrest is in the second position.

[c40] 40. The apparatus as claimed in claim 39,
said structure removably mounting the handrest on the frame assembly,
said structure including a bracket coupled between the handrest and the frame assembly.

[c41] 41. The apparatus as claimed in claim 40,
said structure including components for adjustably cou-

pling the handrest to the bracket.

[c42] 42. The apparatus as claimed in claim 39, said frame assembly including first and second arms, said first arm pivotal about a first axis of rotation, said second arm pivotal relative to the first arm about a second axis of rotation, the first and second rotational axes essentially lying in a common plane and intersecting to define a work zone at the region of intersection thereof, said second arm being pivotally coupled to the distal end of the first arm.

[c43] 43. The apparatus as claimed in claim 42, said first and second axes being generally perpendicular relative to one another.

[c44] 44. The apparatus as claimed in claim 43, said second arm including an outboard portion spaced from said first arm and offset from said common plane, said outboard portion supporting a fixture for receiving said workpiece-supporting tool assembly, with said fixture and workpiece-supporting tool assembly being cooperatively oriented and configured so that a supported workpiece is located substantially at said work zone.

[c45] 45. The apparatus as claimed in claim 44,

said workpiece-supporting tool assembly being shiftable when received in said fixture by pivoting of said arms to selectively alter the orientation of said workpiece while maintaining the workpiece substantially within said work zone.

[c46] 46.The apparatus as claimed in claim 44,
said workpiece-supporting tool assembly being removably received in said fixture.

[c47] 47.The apparatus as claimed in claim 46,
said workpiece-supporting tool assembly including a tubular tool assembly clamp slidably received in the fixture and a compressible workpiece holder removably received in said tool assembly clamp.

[c48] 48.The apparatus as claimed in claim 47,
said tool assembly clamp including a generally cylindrical housing and a receiver slidably received within the housing,
said receiver including a pin-receiving slot at one end and a threaded shaft at the opposing end,
said workpiece holder including a pin configured for slidable receipt in said pin-receiving slot.

[c49] 49.The apparatus as claimed in claim 39,
said frame assembly including a mount plate adapted to

couple the frame assembly relative to the support.

[c50] 50. The apparatus as claimed in claim 49,
said mount plate presenting opposing ends,
said handrest being removably coupled to one end of the
mount when in the first position and removably coupled
to the other end of the mount when in the second posi-
tion.